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FURTHER EVIDENCE ON THE NEED OF MAGNESIUM FOR PINEAPPLE IN LATOSOLS

by

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ABSTRACT

The information presented in this paper clearly demonstrates once more the outstandingly beneficial effect of magnesium on yields of pineapples when grown on the acid latosols, soils typical of the pineapple growing region of Puerto Rico.

Pineapple plants supplied with magnesium produced the average 2.75 tons more fruits per acre than plants not supplied with this nutrient. This was equivalent to a 20 percent increase in yields.

Foliar analyses revealed that highest fruit yields were associated with the highest leaf magnesium contents.

Neither the use of lime alone or in combination with magnesium were effective in increasing significantly pineapple yields.

From the results presented herein it may be concluded that magnesium should be incorporated in the fertilizer mix or applied in foliar sprays, as may be more advantageous in a particular situation so as greatly to increase economical pineapple production.

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TABLE 1.--Mean yield per acre of pineapple as affected by fertilizer treatments on Bayamón sandy clay [1/]

Treatment No.	Description of treatments	Leaf Mg	Mean weight of fruit	Mean yield of fruits per acre	Outyielded at .01
		Percent	Pounds	Tons	
1	$MgSO_4$, 300 lbs. per acre	0.18	4.14	18.25	11, 12
2	MgO, 300 lbs. per acre	.22	4.24	18.69	11, 12
3	$MgSO_4$, 600 lbs. per acre	.20	3. 93	17.32	11, 12
4	MgO, 600 lbs. per acre	.33	4.39	19.35	11, 12
5	$MgSO_4$, 1000 lbs. per acre	.19	4.13	18.21	11, 12
6	MgO, 1000 lbs. per acre	.35	4.25	18.73	11, 12
7	$MgSO_4$, 600 lbs. per acre + $CACO_3$	.28	4.36	19.22	11, 12
8	MgO, 600 lbs. per acre + $CACO_3$	.32	4.10	18.07	11, 12
9	McChelate, 100 lbs. per acre	.16	3.85	16.97	11, 12
10	$MgSO_4$ spray, 15 lbs. per 100 gals [2/]	.18	4.33	19.09	11, 12
11	$CACO_3$, 1 ton per acre	.14	3.49	15.38	--
12	Check - NPK only	.14	3,38	14.90	--

1/ NPK was supplied in all treatments in a 13-3-12 fertilizer at the rate of 20 cwt. per acre distributed in 3 applications.

2/ Plants received 3 magnesium sprays.

TABLE 2.--Mean yield per acre of pineapples as affected by fertilizer treatments on Bayamón sandy clay at two locations [1/]

	Treatment ($MgSO_4$ per acre)	Experiment No. 2				Experiment No. 3			
		Mean Weight of fruit	Mean yield of fruit per acre	Outyielded at .05	Outyielded at .01	Mean Weight of fruit	Mean yield of fruit per acre	Outyielded at 05	Outyielded at .01
		Pounds	Pounds	Tons			Pounds	Tons		
1	600	3.97	17.10	1,2,5,6,8	1, 8	4.20	18.09	8	8
2	300	3.90	16.80	1,2,5,6,8	1, 8	4.35	18.74	1, 8	8
3	Mg chelate (100 lbs./acre)	3.67	15.81	8	8	--	--		
4	1200	3.65	15.72	8	8	3.89	16.76	8	
5	150	3.61	15.55	8	8	3.87	16.67	8	
6	75	3.41	14.91	8	8	3.80	16.37	8	
7	$MgSO_4$ sprays (3) (15 lbs. /100 gals. each)	--	--	--	--	4.15	17.88	8	8
8	Check - NPK only	3.18	13.70	--	--	3.41	14.69		

1/ NPK was supplied in all treatments in a 13-3-12 fertilizer at the rate of 20 cwt. per acre distributed in 3 applications.